Multiplying By 111

    A. Multiplying by 111 is very similar to multiplying by 11 (see section II). When multiplying by 111 you add 3 digits together instead of 2. See below:

        1. Write down the last digit.

        2. Add the last 2 digits together. Write the answer, carry if necessary.

        3. Add the last 3 digits together. Write the answer, carry if necessary.

        4. Moving 1 digit at a time, move to the left and add 3 digits at a time until only the first 2 digits are left. Write the answers and carry.

        5. Add the first 2 digits. Write the answer, carry if necessary.

        6. Write down the first digit.

    B. Look at Ex [1] for an illustration of the above steps.

        Ex [1] 8273 x 111 = _____.

          a) Write down 3.

$$8 \ 2 \ 7 \ \overset{\text{3}}{3}$$

          b) $3 + 7 = 10$. Write down 0 and carry the *1.

$$8 \ 2 \ 7 \ 3 \quad ^{10}$$

          c) $3 + 7 + 2 = 12 + *1 = 13$. Write 3, carry *1.

$$8 \ 2 \ 7 \ 3 \quad ^{12 + *1}$$

          d) $7 + 2 + 8 = 17 + *1 = 18$. Write 8, carry *1.

$$8 \ 2 \ 7 \ 3 \quad ^{17 + *1}$$

          e) $2 + 8 = 10 + *1 = 11$. Write 1, carry *1.

$$8 \ 2 \ 7 \ 3 \quad ^{10 + *1}$$

          f) $8 + *1 = 9$. Write 9.

$$8 \ 2 \ 7 \ 3 \quad ^{8 + *1}$$

          g) The answer is 918303.

Ex [2] 32 x 111 =

      a) Write down 2.

      b) 2 + 3 = 5. Write down 5.

      c) Since we are multiplying by 111, we have to add at least 3 digits so think of 32 as being 032, so we must add 3 and 2 again. So write down 5.

      d) Write down 3.

      e) The answer is 3552.